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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/722,990	11/26/2003	Junji Mizutani	SAEG154.001AUS	9018

20995 7590 08/03/2006

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EXAMINER
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DRODGE, JOSEPH W

ART UNIT	PAPER NUMBER
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1723

DATE MAILED: 08/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/722,990

Applicant(s)

MIZUTANI ET AL.

Examiner

Joseph W. Drodge

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-5 and 9 is/are allowed.
- 6) ☒ Claim(s) 6 and 10 is/are rejected.
- 7) ☒ Claim(s) 7, 8 and 11 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

#### ALLOWABLE SUBJECT MATTER

Claims 1-5 and 9 are distinguished over all of the prior art.

Independent claim 1, and claims dependent, therefrom distinguish over the prior art of record in view of recitation of a method of hydrofluoric (HF) acid wastewater treatment in which a hydrofluoric acid concentration and evaporation step, producing a vapor, precedes a neutralization step in which residual hydrofluoric acid-containing vapor, which had not been dissolved in an intermediate dissolution step is neutralized with an alkali to produce neutralized liquid and dehydrofluorinated vapor, and additionally condensing dehydrofluorinated vapor obtained in the neutralization step to produce condensed water.

Claims 1-4 thus define over each of the Japanese patent publications of record with the 0304 and 1104 Information Disclosure Statements, a neutralization step with alkali to treat HF acid-containing wastewater was followed by a downstream, subsequent concentration/evaporation step. Similarly, in Kurokawa et al patent 6,379,548, in a system and method for treating waste water containing HF acid, a step for neutralizing the effluent with alkali precedes a concentration/evaporation step (or steps), in combination with other process steps including biological treatment and ion exchange treatment. Chlanda et al patent 3,787,304 of record and newly cited Srinivasan et al patent 4,599,156, although each teaching to concentrate HF acid by evaporation, followed by dissolution and neutralization steps, do not teach a condensation step following the neutralization step, especially for condensed dehydrofluorinated vapor from the neutralization step.

Claim 5 similarly distinguishes in view of recitation of separating concentrated and neutralized liquid into HF acid-containing water, alkali-containing water and desalted water.

Apparatus claim 9 similarly distinguishes in view of a separator for separating neutralized liquid from the 2<sup>nd</sup> concentrator into HF acid-containing water, alkali-containing water and desalted water.

Claims 7,8 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Dependent claims 7 and 8 distinguish for the same reason as claim 9 concerning producing of 3 fractions of water from the neutralized liquid.

Dependent claim 11 also distinguishes in view of recitation of a return line operable for returning HF acid-containing vapor solution from water contactor to HF acid concentrator. In Chlanda, such vapor solution is returned to a condenser downstream of the concentrator.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 6 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Chlanda et al patent 3,787,304.

Chlanda et al disclose HF concentrator/evaporator (column 2, lines 29-33 concerning digester and evaporator of a phosphate plant), 'water' contactor 3 (column 4, lines 63-67 states that water is added to settler/contactor 3), 'alkali' contactor 4 (column 2, lines 47-53 stating that a potassium fluosilicate slurry is reacted, i.e. neutralized, with alkali material of potassium hydroxide), and downstream "'still" 18, stills being apparatus in which substances are heated to a gaseous state and then condensed, the effluent or outlet stream from alkali contactor 4 in fluid communication with downstream still or condenser 18, via intermediate electrodialysis unit and water-splitting unit stages 5 and 10-14. Lines 21,22 and 24 constitute "vapor supply lines" for supplying vapors from upstream evaporator towards the water and alkali contactors (again see column 2, lines 29-33). Recitation of production of condensed water remains deemed functional intended use language and of little patentable weight.

Applicant's arguments filed on June 23, 2006, concerning Chlanda, have been fully considered but they are not persuasive. It is primarily argued that Chlanda lacks

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the newly claimed vapor supply line. However, column 2, lines 29-33 clearly disclose vapors from an HF-producing evaporator passing through a line 21, with the stream of line 21 communicating with a further lines 22 and 24 that feed or supply the devices 3 and 4 for contacting effluent with water and alkali material, respectively.

Arguments concerning rejection of claim 9 over Chlanda, rejection of claims over Kurokawa and over 112, 2<sup>nd</sup> paragraph are however persuasive.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Drodge at telephone number 571-272-1140. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker, can be reached at 571-272-1151. The fax phone number for the examining group where this application is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either private PAIR or Public PAIR, and through Private PAIR only for unpublished applications. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JWD

July 25, 2006

JOSEPH DRODGE  
PRIMARY EXAMINER

  
JOSEPH DRODGE  
PRIMARY EXAMINER